

IMPACT SIMULATION FOR A CAR GYRO SYSTEM

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During a car's operation, the steel wire spring in the car gyro system can be damaged. To pass the impact test and improve the gyro box design, an in-depth understanding of the behavior of the gyro under impact load is important. The impact simulation can model the complete impact process and provide all of the physical quantities, such as strain, stress, displacement, velocity, acceleration, interface force, etc.

In order to evaluate the impact stress level at the critical area, (i.e. the joint of the steel wire spring and pendulum in the gyro) during impact, the drop simulation of the gyro system is performed. A comparison of the original design and the improved design showed that the maximum principal stress for the improved design in the critical area was significantly reduced. It can be concluded that this gyro box drop simulation is valuable and significant for enabling design improvements and cycle time reductions.

References

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